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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/553,859	12/06/2005	John Andrew Murray McGrath	08830-0368US1	6564
23973 7590 08/24/2007 DRINKER BIDDLE & REATH ATTN: INTELLECTUAL PROPERTY GROUP ONE LOGAN SQUARE 18TH AND CHERRY STREETS PHILADELPHIA, PA 19103-6996			EXAMINER GREECE, JAMES R	
			ART UNIT 2873	PAPER NUMBER
			MAIL DATE 08/24/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/553,859

Applicant(s)

MCGRATH ET AL.

Examiner

James R. Greece

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 14, 15, 23-25, 36, 42 and 43 is/are rejected.
- 7) ☒ Claim(s) 3-13, 16-22, 26-35 and 37-41 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 10/20/2005.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

***Detailed Action***

Applicant cooperation is requested in correcting any errors of which applicant may become aware in the specification.

***Status of the Application***

Claims 1-43 are pending in this application

If the applicant is aware of any prior art or any other co-pending application not already of record, he/she is reminded of his/her duty under 37 CFR 1.56 to disclose the same.

***Drawings***

There are no objections to the applicant's drawings at this time.

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-2, 23-25, and 42-43 are rejected under 35 U.S.C. 102(b) as being anticipated by Fahle et al (USPAT 5,920,375).

In regard to claim 1, Fahle teaches:

(a) Providing an image area in which images can be presented to the eye, and in which the luminance of any point in the image area over the desired field of view under test can be defined at least as accurately as the desired accuracy of a retinal map to be obtained; (for details see Fahle Figure 5) (b) forming a fixation image; (See Fahle numeral FP1) (c) presenting a stimulus to the eye at a location within the image area spaced from the fixation image; (for details see

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Fahle col. 1, lines 38-48) (d) detecting a saccade triggered by said stimulus and immediately removing the original fixation image and creating a new fixation image at said location; (See fahle col. 1, lines 38-48) (e) recording the timing and magnitude of the saccade and the subsequent fixation; (See col. 4, lines 23-42) (f) repeating steps (c) to (e); and (g) comparing the results with a database of typical eye responses. (See col. 1, lines 55-64)

In regard to claim 2, Fahle teaches:

Further including determining the location of the subject's head relative to the image in at least the z-axis, without applying any constraint to the head motion. (See Fahle col. 2, lines 31-41)

In regard to claim 23, Fahle teaches:

In which the first fixation image is formed by a dark area to which the eye is drawn by an image area giving an impression of perspective, and in which at least the first stimulus is formed by an image area of high spatial frequency. (See col. 13, lines 1-19)

In regard to claim 24, Fahle teaches:

(a) display means for presenting images to the eye where the luminance of any point in the image over the desired field of view under test can be defined at least as accurately as the desired accuracy of a retinal map to be obtained; (See Fahle numeral 11) (b) means for generating on the display means an initial fixation image; (For details see Fahle col. 2, lines 20-30) (c) means for generating a stimulus on the display means at a location spaced from the fixation image; (For details see Col. 3, lines 39-44) (d) means for detecting a saccade triggered by said stimulus and immediately removing the initial fixation image and creating a new fixation image at said location; (For details see Col. 3, lines 22-26) (e) means for recording the timing and magnitude

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of each saccade and subsequent fixation and for comparing the results with a database of typical eye responses. (For details see numeral 6)

In regard to claim 25, Fahle teaches:

Further including means for determining the location of the subject's head relative to the image in at least the z-axis, without applying any constraint to the head motion. (for details see numerals 2a, 2b, and 6)

In regard to claim 42, Fahle teaches:

The first fixation image is formed by a dark area to which the eye is drawn by an image area giving an impression of perspective, and in which at least the first stimulus is formed by an image area of high spatial frequency (for details see col. 3, lines 1-19)

In regard to claim 43, Fahle teaches:

A software package containing data enabling the essential timing, control and display mechanisms for carrying out the method of claim 1 using commercially available display, camera and measurement devices. (Numeral 6 a computer in Fahle is disclosed to carry out these functions as programmed)

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 14 and 36 rejected under 35 U.S.C. 103(a) as being unpatentable over Fahle et al (USPAT 5,920,375) as applied to claims 1 and 24 above, and further in view of Donaldson (USPAT 6,367,932).

In regard to claim 14, Fahle does not explicitly disclose the following as claimed:

In which a sequence of visual stimuli is presented in said image area in a random or pseudo random sequence such that the position and preferably the expected time of appearance of the next stimulus in a sequence is not readily apparent to a person viewing the display.

However Donaldson discloses this limitation in figure 3.

In regard to claim 36, Fahle does not explicitly disclose the following as claimed:

In which the stimulus generating means is arranged to present a sequence of visual stimuli in said image area in a random or pseudo random sequence such that the position and preferably the expected time of appearance of the next stimulus in a sequence is not readily apparent to a person viewing the display.

However Donaldson discloses this limitation in figure 3.

It would have been well known to one having ordinary skill in the art of ophthalmic device design to modify the device of Fahle to include a random or pseudo random sequence of

visual stimuli as taught by Donaldson for the purpose of overcoming the problems associated with the Bjerrum test, the Static Perimetry test and the Optokinetic test.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claim 15 recites the limitation "T" in line 3 of the claim. There is insufficient antecedent basis for this limitation in the claim.

9. Claim 15 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter: The prior art taken singularly or in combination fails to anticipate or fairly suggest the limitations of the independent claims, in such a manner that a rejection under 35 U.S.C. 102 or 103 would be proper.

In regard to dependent claim 15, the combination of all of the specific limitations as disclosed in the dependent claim 15 is necessary in order to make the claim allowable. This specifically includes an explicit definition of T (as disclosed in claim 4), which would provide sufficient antecedent basis to overcome the 112 2<sup>nd</sup> paragraph rejection.

*Claim Objections*

11. Claims 3-13, 16-22, 26-35 and 37-41 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. The following is a statement of reasons for the indication of allowable subject matter: The prior art taken singularly or in combination fails to anticipate or fairly suggest the limitations of the independent claims, in such a manner that a rejection under 35 U.S.C. 102 or 103 would be proper.

Specifically in regard to dependent claim 3, the combination of all of the specific limitations as disclosed in the dependent claim 3 combined with those of independent claim 1 is necessary in order to make the claim allowable. The combination of the limitations of claim 1 with an animated, that is create apparently spontaneous lifelike movement for the fixation image and the given numerical limitations described in claim 3 are unique in the art.

Specifically in regard to dependent claim 4, the combination of all of the specific limitations as disclosed in the dependent claim 4 combined with those of independent claim 1 is necessary in order to make the claim allowable. The combination of the limitations of claim 1 with an additional step utilizing the specific numerical formulation of claim 4 is unique in the art.

Specifically in regard to dependent claim 17, the combination of all of the specific limitations as disclosed in the dependent claim 17 combined with those of independent claim 1 is



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necessary in order to make the claim allowable. The combination of the specific parameters and steps, as described in dependent claim 17 with the limitations of claim 1, is unique in the art.

Specifically in regard to dependent claim 22, the combination of all of the specific limitations as disclosed in the dependent claim 22 combined with those of independent claim 1 is necessary in order to make the claim allowable. The combination of the limitations of claim 1, with the parameters, sub-image only capable of discrimination by the fovea, and the physical locations of the stimulus are unique in the art.

Specifically in regard to dependent claim 26, the combination of all of the specific limitations as disclosed in the dependent claim 26 combined with those of independent claim 24 is necessary in order to make the claim allowable. The combination of the limitations of claim 24 with an animated, that is create apparently spontaneous lifelike movement for the fixation image and the given numerical limitations described in claim 26 are unique in the art.

Specifically in regard to dependent claim 27, the combination of all of the specific limitations as disclosed in the dependent claim 27 combined with those of independent claim 24 is necessary in order to make the claim allowable. The combination of the limitations of claim 24 with an additional step utilizing the specific numerical formulation of claim 27 is unique in the art.

Specifically in regard to dependent claim 35, the combination of all of the specific limitations as disclosed in the dependent claim 35 combined with those of independent claim 24 is necessary in order to make the claim allowable. The specific combination of limitations from claim 24 with the image display means being adapted to display several images are simultaneously of a resolution of less than 0.3 degrees only resolvable by the fovea, such that the

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eye is induced to sequentially saccade at the natural saccade frequency of the patient's natural visual scanning mode is unique in the art.

Specifically in regard to dependent claim 39, the combination of all of the specific limitations as disclosed in the dependent claim 39 combined with those of independent claim 24 is necessary in order to make the claim allowable. The specific combination of limitations from claim 24 with the image display means being operative to display images containing a known priority sequence of predictable fixation points at separations of greater than 10 degrees of approximately half or less the average brightness of the image and where at least one region contains a further sub-image of a recognizable structure or alphanumeric character or pictorial representation of an object with a resolution of approximately 0.25 degrees per cycle; and in which an alarm or notification is delivered when more than one sequence of saccades of sub 100 ms and greater than 10 degrees occurs per overall image and records the overall time of the sequence of sub 100 ms saccades is unique in the art.

Specifically in regard to dependent claim 41, the combination of all of the specific limitations as disclosed in the dependent claim 41 combined with those of independent claim 24 is necessary in order to make the claim allowable. The specific combination of limitations from claim 24 with the image display means being operative to display an image which contains a moving stimulus traveling across the display and where a sub-image of high detail only capable of discrimination by the fovea is presented for a period adjustable between 100-600 mS within a given time of the presentation of a simple bright stimulus on the opposite point of an axis drawn through the moving stimulus, said given time being shorter than the time required by the subject

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to saccade to the simple stimulus and back to the complex stimulus, preferably 50 ms is unique in the art.


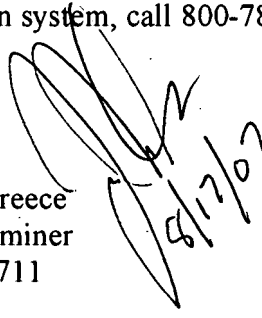
### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James R. Greece whose telephone number is 571-272-3711. The examiner can normally be reached on M-Th 7:30-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Mack can be reached on 571-272-2333. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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